Fish Passage Investigations for the Feather River

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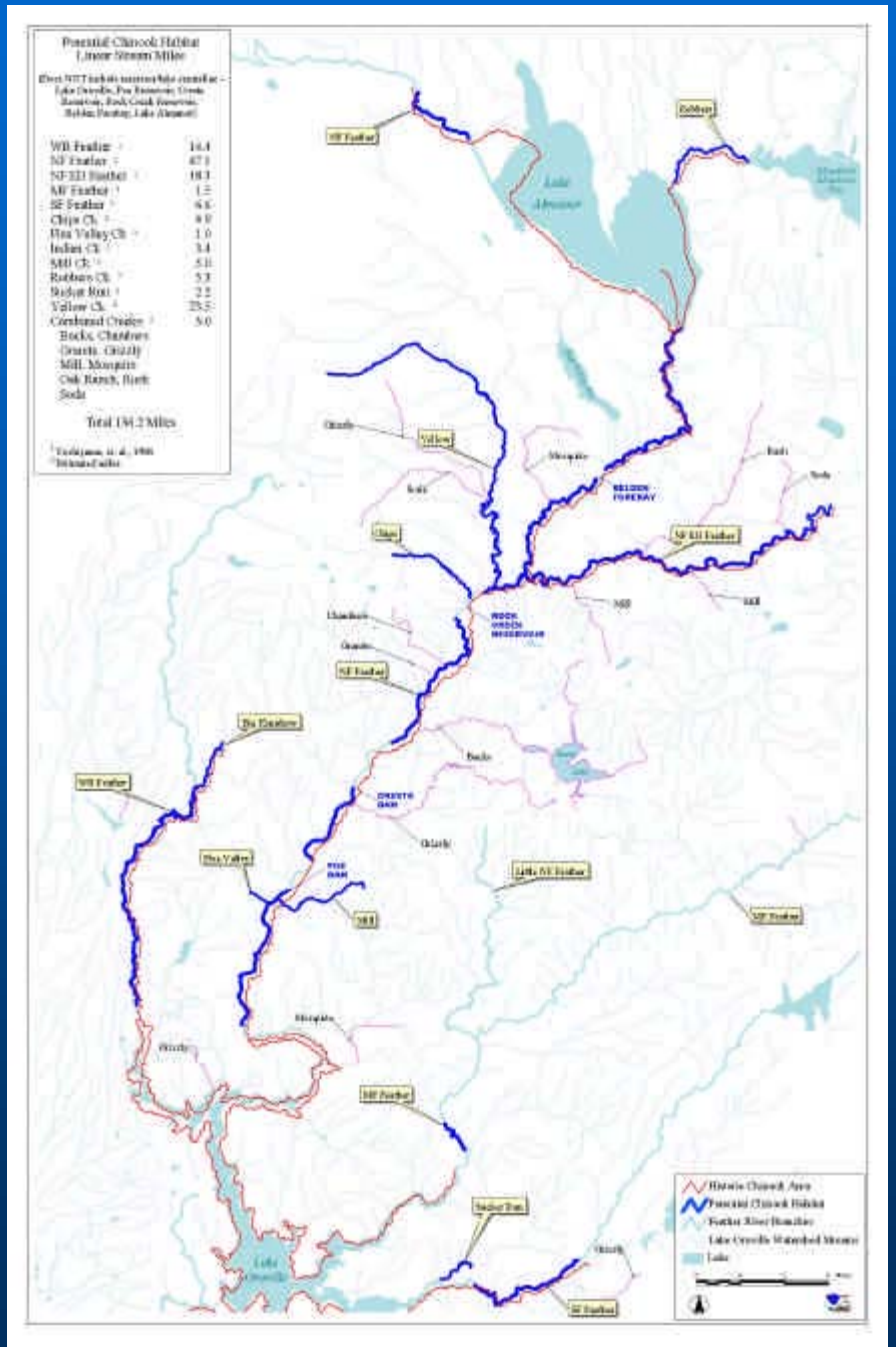
Benefits of Fish Passage

- Cultural and Recreational Values
- “New” habitat can be created, relieving the need for cold water habitat on the valley floor
- Central Valley Spring-Run Chinook Salmon could express a “Stream-Type” Life History
- Could eliminate concerns over hybridization
- Upland aquatic and terrestrial fauna would receive nutrients from carcasses
- Could reduce the emphasis on and problems associated with hatcheries
- Reduce conflicts with land and water development
- ...

Potential Habitat Above Oroville Dam



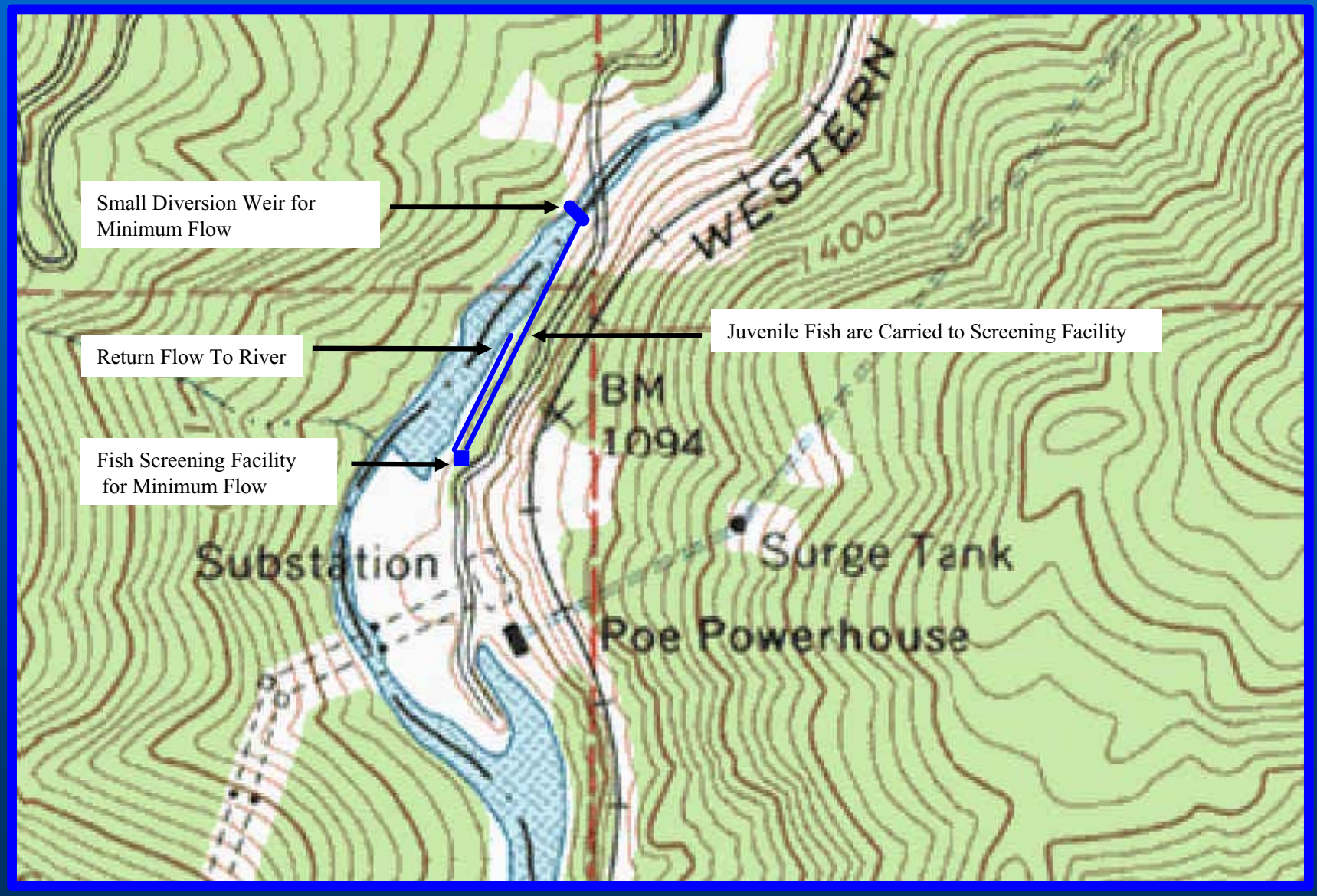
Goals

- Investigate the Feasibility of Fish Passage for the Feather River
- Ensure That Necessary Studies Are Conducted
- Submit Section 18 Fishway Prescription under the Federal Power Act, if Appropriate

Upstream Passage is Generally Not a Problem

Source: Wayne 1961

Downstream Passage at Low Flows is Feasible



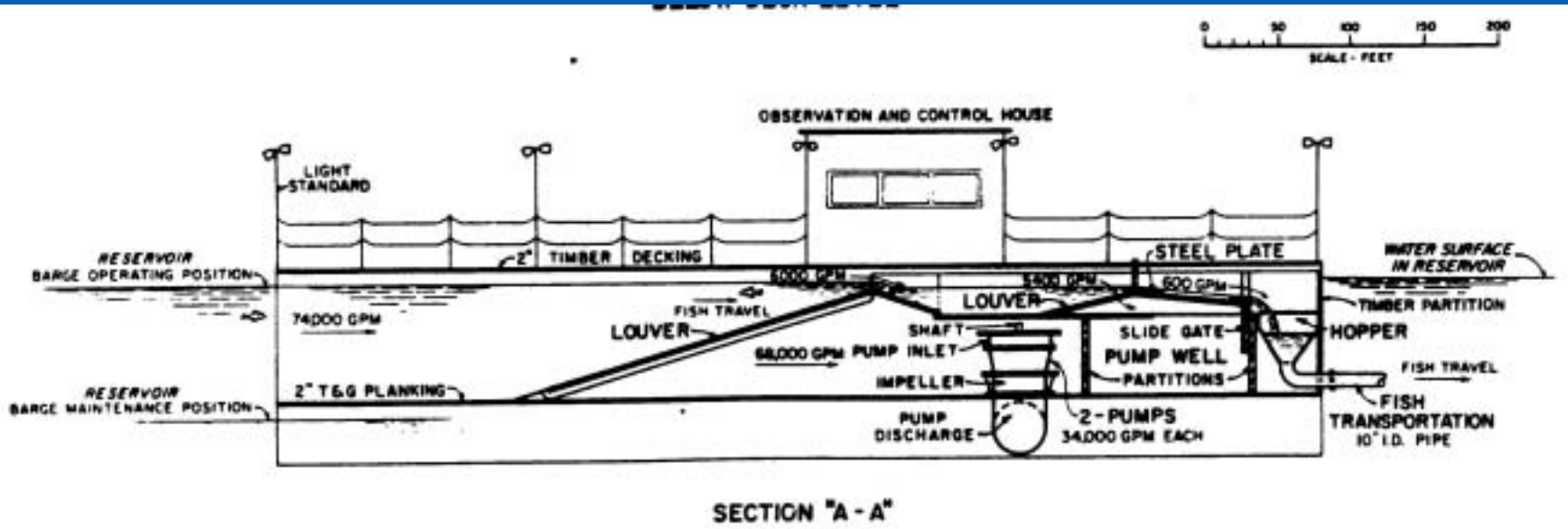
The Problem:
Downstream Passage during High Flows

Juvenile down-migrants can:

- **be eaten by predators**
- **fail to find the exit (tunnel or bypass) out of the lake**
- **take up residence in the lake**
- **perceived conflicts with hatchery operations (although these can be resolved by moving the water supply source, sterilizing the water, etc.)**

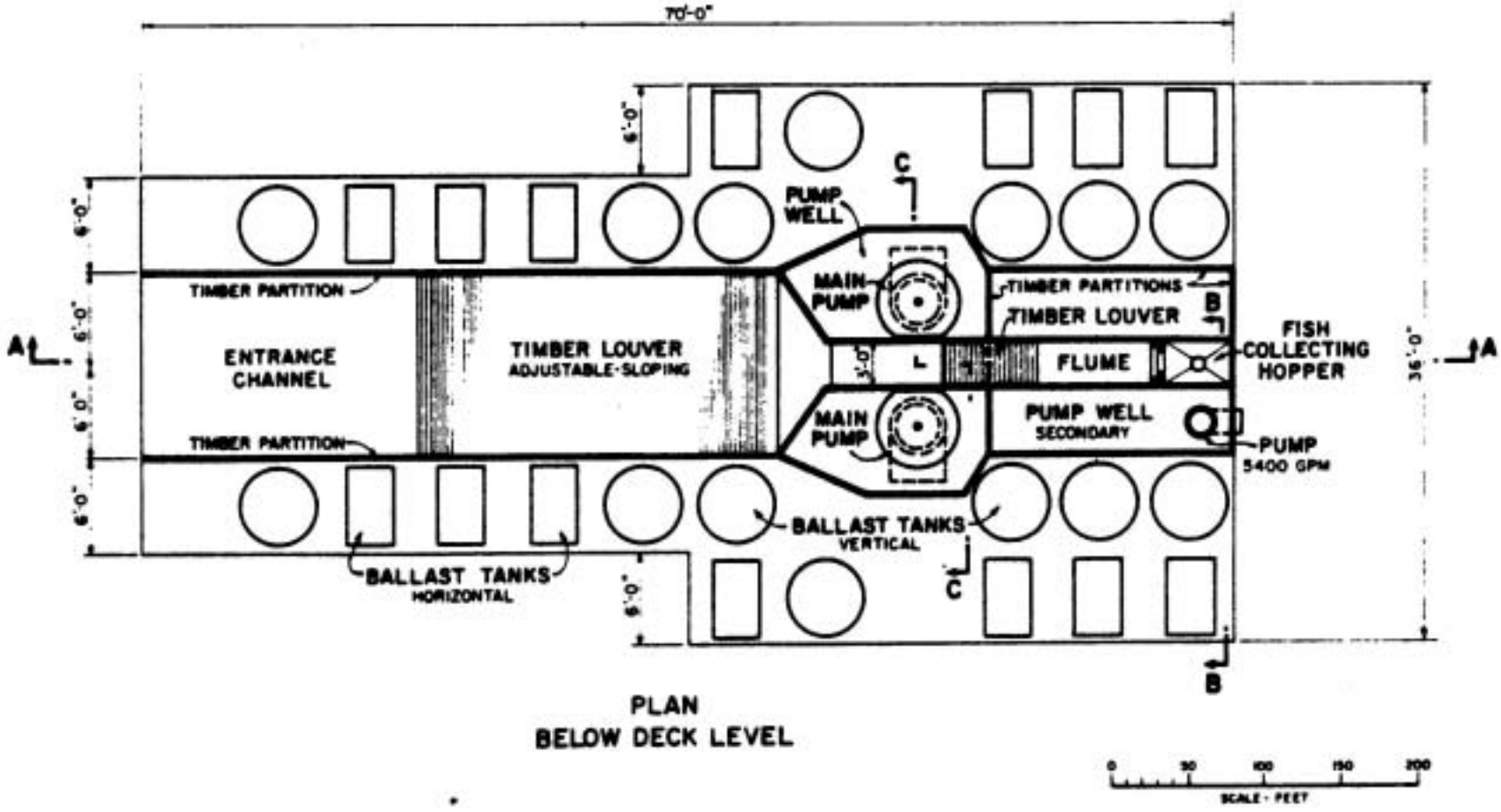
Baker Lake "Gulper" System

Collecting Juveniles From The Upper Arms of Lake Oroville



Source: Wayne 1961

Collecting Juveniles From the Upper Arms of Lake Oroville



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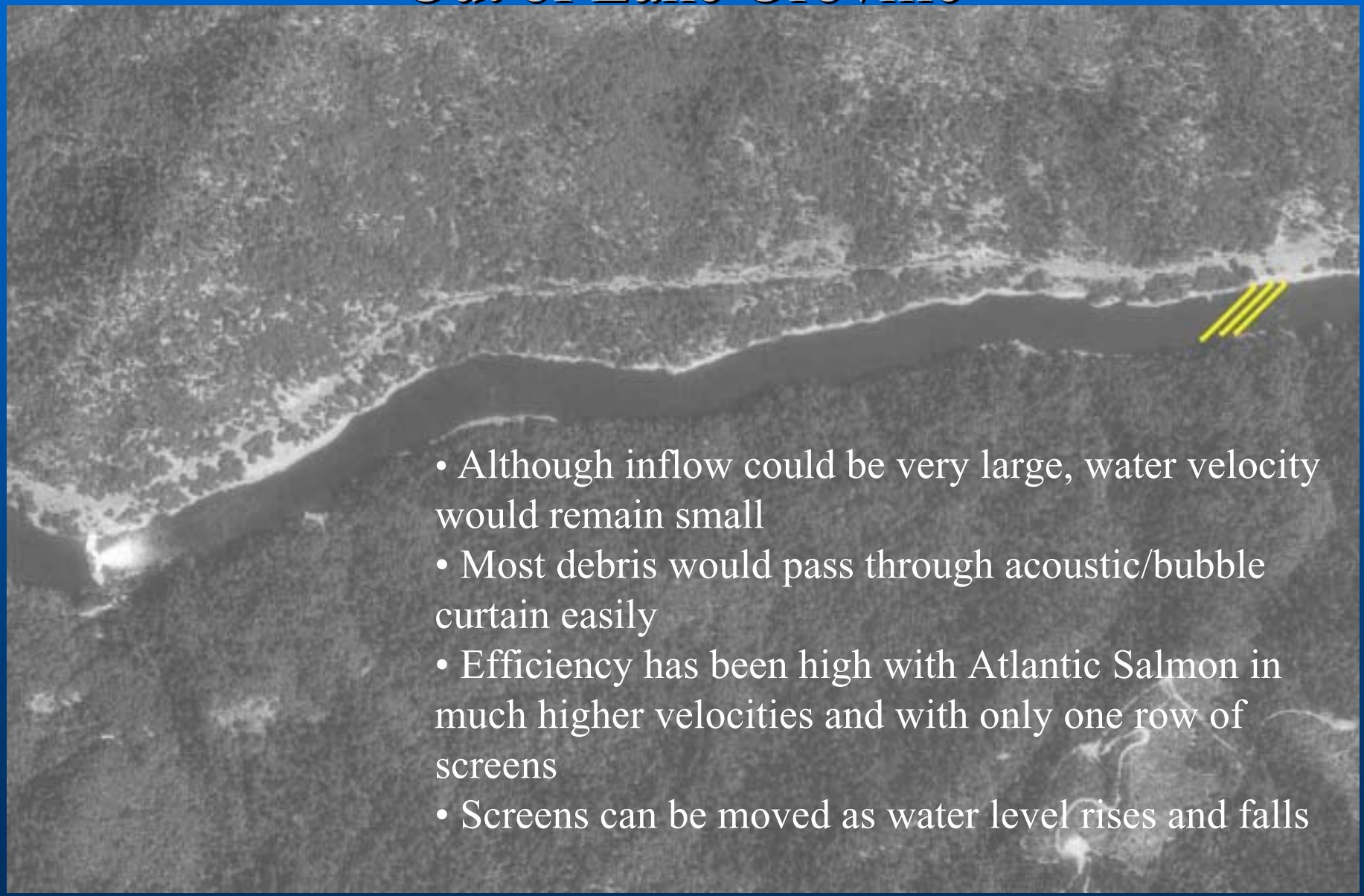
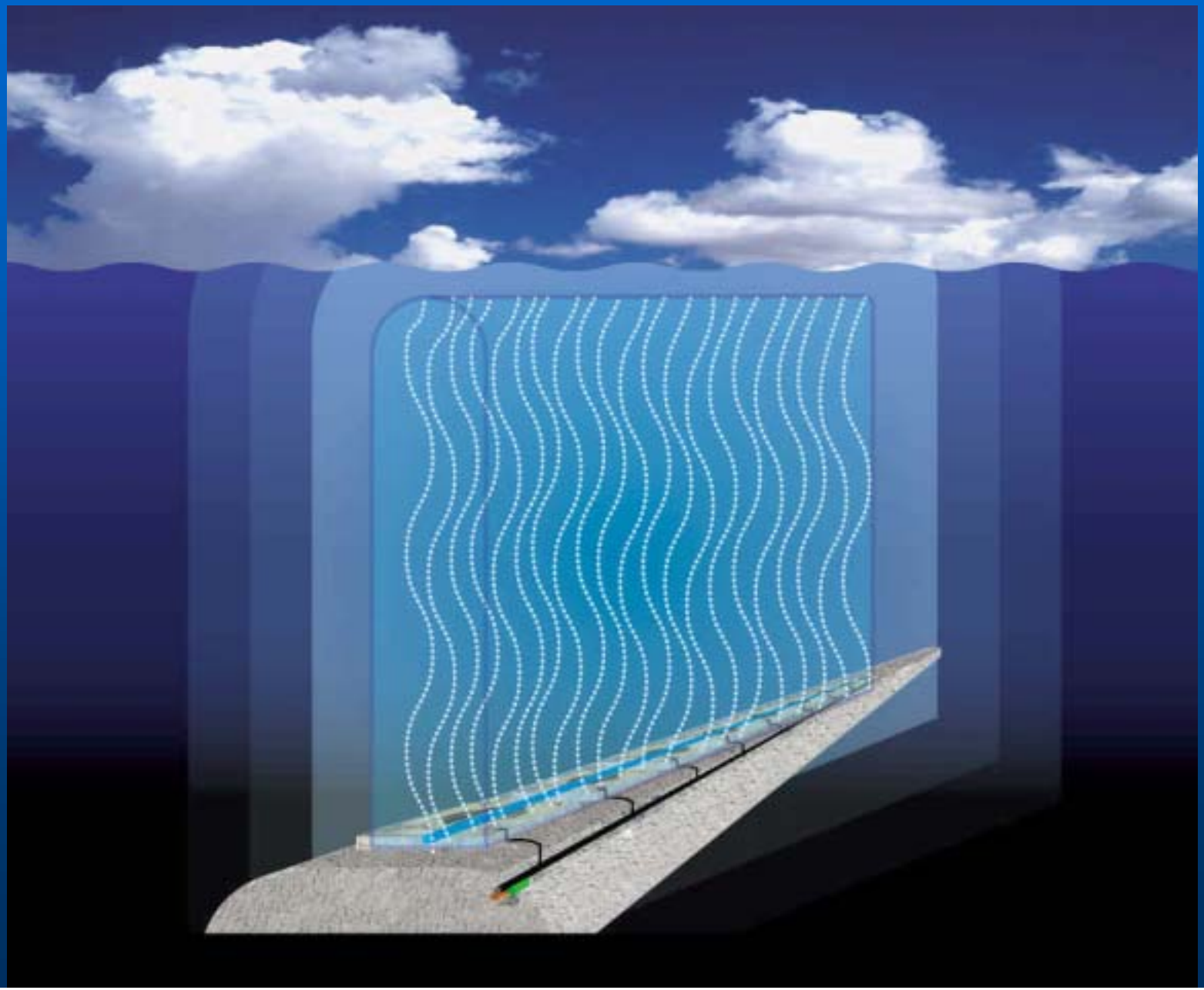
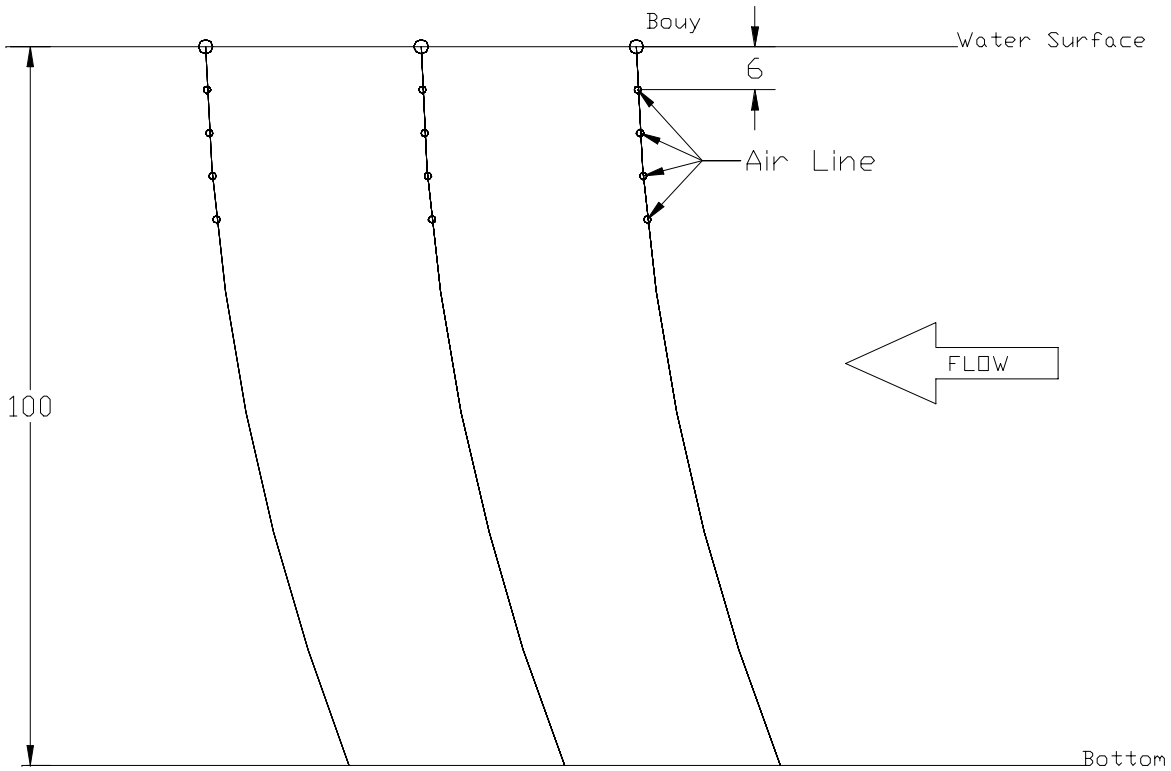
Screening Juvenile Salmonids Out of Lake Oroville

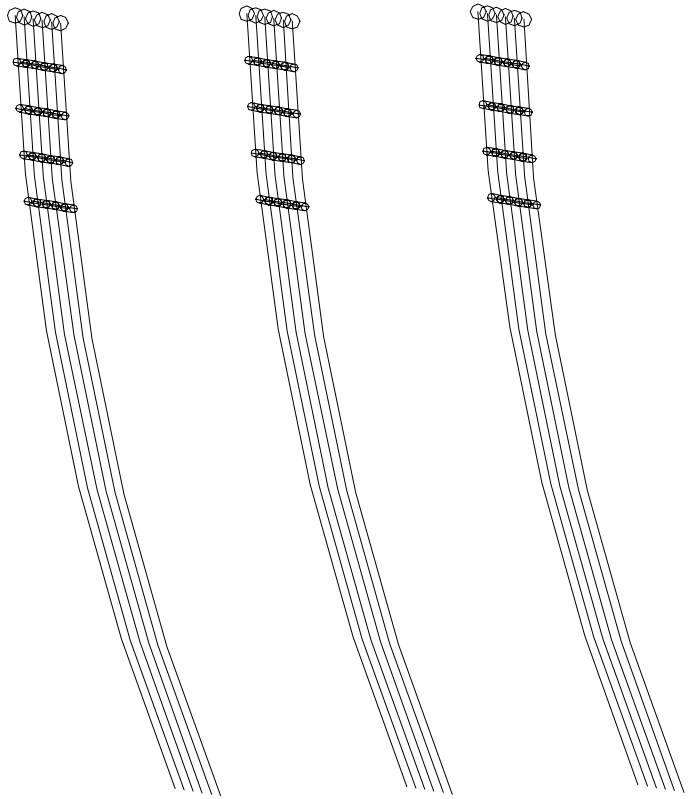


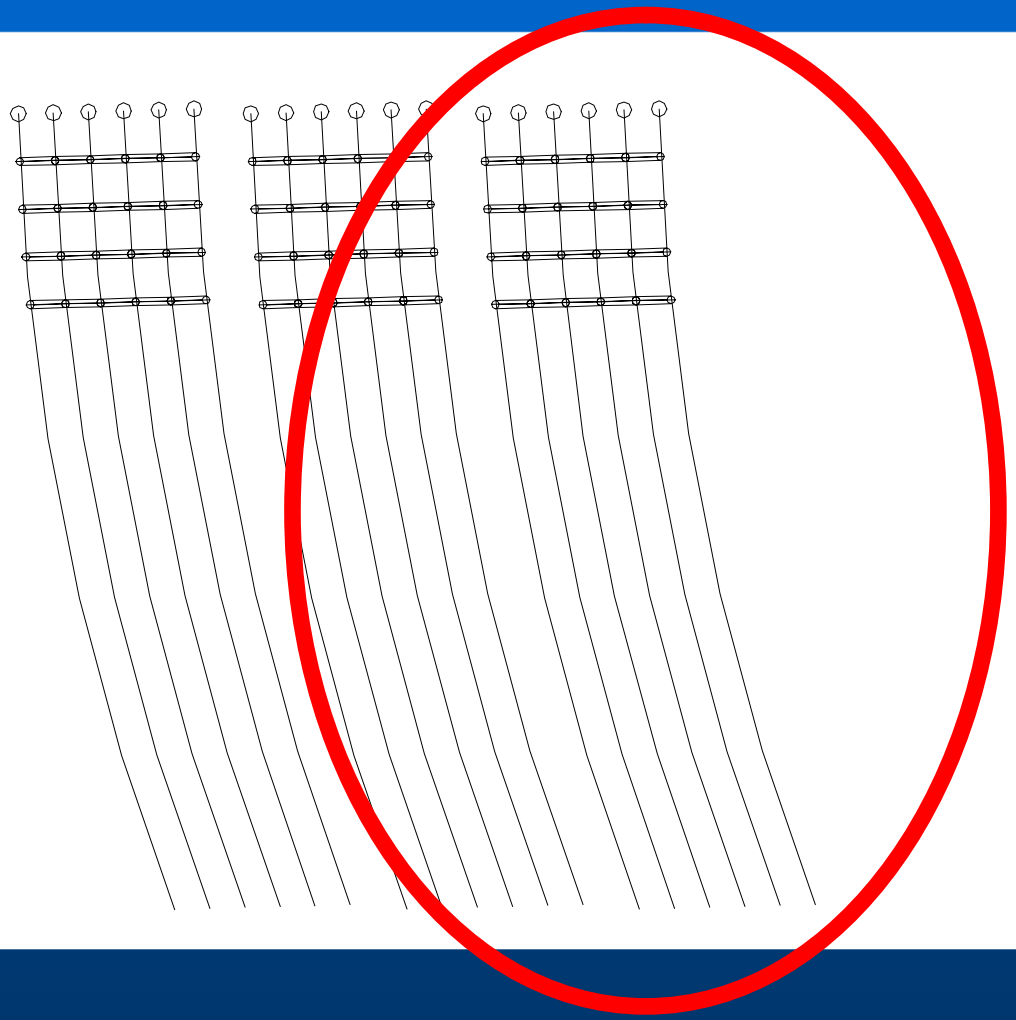
- Although inflow could be very large, water velocity would remain small
- Most debris would pass through acoustic/bubble curtain easily
- Efficiency has been high with Atlantic Salmon in much higher velocities and with only one row of screens
- Screens can be moved as water level rises and falls

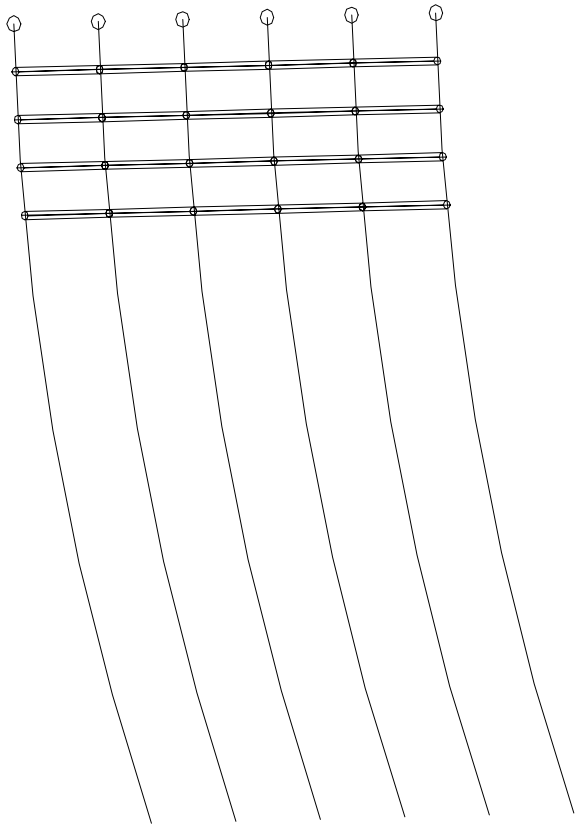
Screening Juveniles Out of the Lake



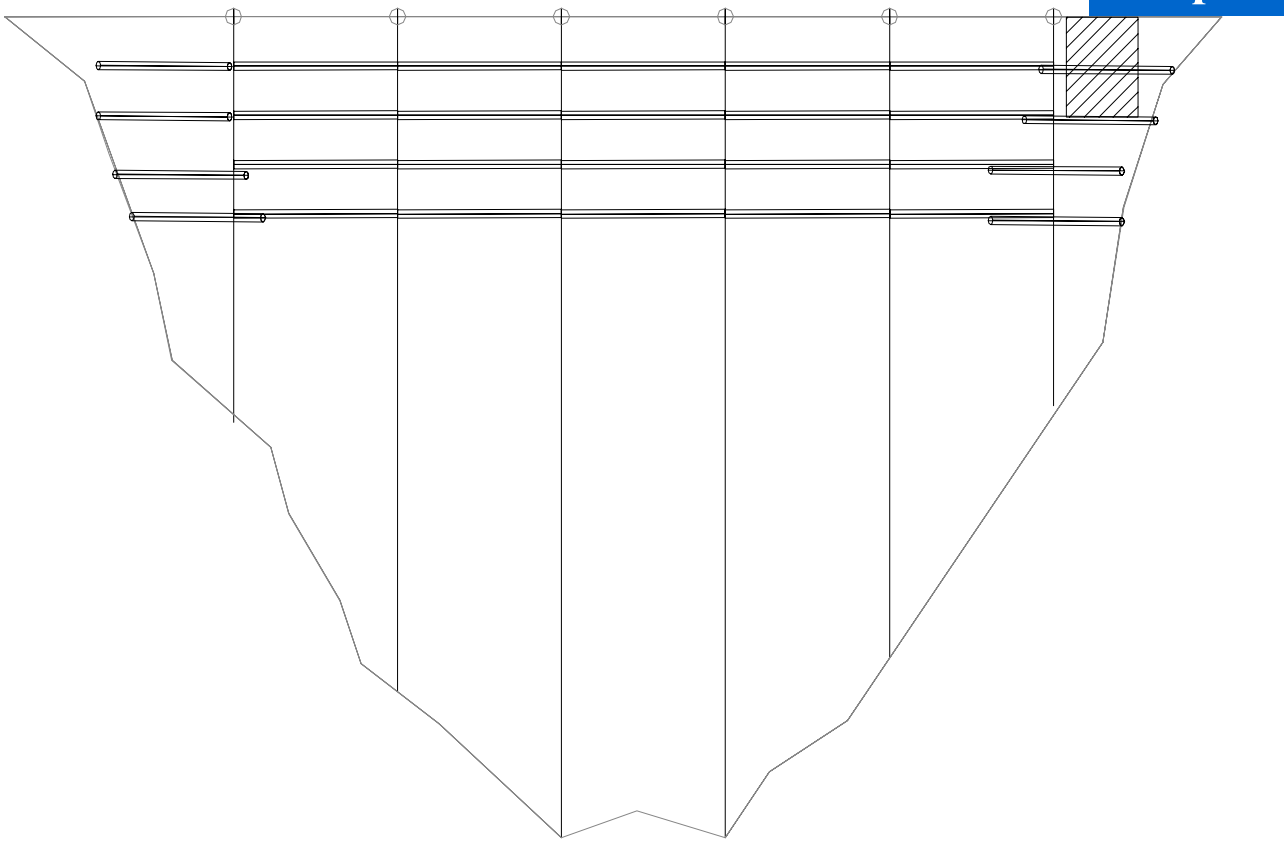

Bouy
Water Surface
6
Air Line
FLOW
100
Bottom

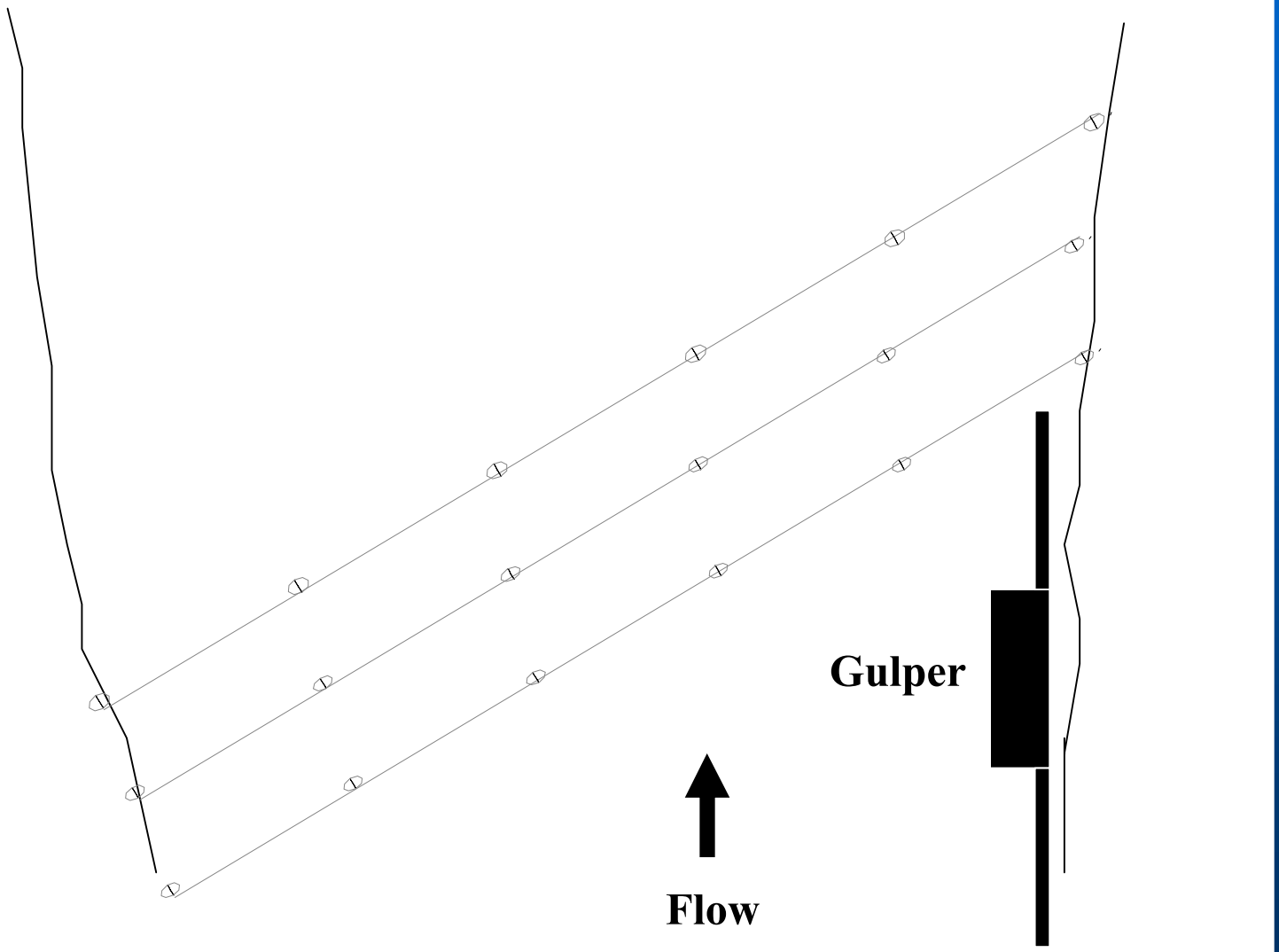






Gulper




Gulper
Flow

Studies Needed:

- Alternatives for Anadromous Fish Reintroduction and Cost Estimates for the Devices and Testing Described (needed September 2003)
- Testing of BAFF - Gulper System (construction completed March 2004) and/or:
  - Testing of 1/4'' Kevlar Net - Gulper System
  - Testing of Gunderboom - Gulper System
- Estimate of Habitat Availability Above Oroville Dam (needed June 2004)